

In the claims:

Following is a complete set of claims as amended with this Response.

1. (Currently Amended) A method of processing video data comprising the steps of:
    - accepting video frame data from a video source;
    - accepting video information regarding the video frame data;
    - comparing [a current state of the] video information corresponding to data for the accepted video frame with gathered video information regarding [the] previous video frame data;
    - determining differential information based on the comparing; and
    - storing the differential information as annotations to the accepted video frame data.
  2. (Original) The method of claim 1, wherein the video information comprises camera geometry information.
  3. (Original) The method of claim 1, wherein the video information comprises camera pose information.
  4. (Original) The method of claim 1, wherein the video information comprises source identification/description/illumination information.
  5. (Original) The method of claim 1, wherein the video frame data comprises images obtained from a camera.
  - 6-7. (Canceled)
  8. (Previously Presented) The method of claim 1, wherein comparing comprises comparing a current state with camera geometry information, camera pose information and source identification/description/illumination information of the video frame data.
  9. (Canceled)
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10. (Previously Presented) The method of claim 1, wherein storing comprises appending the differential information to the video frame data.

11. (Currently Amended) An apparatus comprising:  
a video source to generate video frame data;  
a collector configured to collect video information to be associated with the video frame data;  
a comparator to compare a current state of the collected video information with the collected video information;  
a differential generator to determine differential information based on the comparison; and  
an annotator coupled to the differential generator to annotate the video frame data with the differential information.

12. (Original) The apparatus of claim 11, wherein the video information comprises one or more of: camera geometry; camera pose information; and source identification/description/illumination information.

13. (Previously Presented) The apparatus of claim 12, further comprising calibration software configured to generate the camera geometry information for the video frame data as the video frame data is being gathered by the video source and provide the generated camera geometry information to the collector.

14. (Previously Presented) The apparatus of claim 12, further comprising pose estimation software configured to generate the camera pose information for the video frame data as the video frame data is being gathered by the video source and provide the generated camera pose information to the collector.

15. (Previously Presented) The apparatus of claim 12, further comprising an encoder coupled to the differential generator configured to encode the differential information as an input to the annotator.

16. (Previously Presented) The apparatus of claim 15, wherein the encoder forwards a current state of the video information to a state storage device coupled to the encoder.

17-19. (Canceled)

20. (Previously Presented) The medium of claim 29, wherein the video information is camera geometry information.

21. (Previously Presented) The medium of claim 29, wherein the video information is camera pose information.

22. (Previously Presented) The medium of claim 29, wherein the video information is source identification/description/illumination information.

23. (Canceled)

24. (Currently Amended) The medium of claim 29 [19], wherein the video source is a video capture device.

25-27. (Canceled)

28. (Previously Presented) The medium of claim 29 wherein the instructions for storing comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising appending the differential information to the video frame data.

29. (Currently Amended) A machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

accepting video frame data from a video source;

accepting video information regarding the video frame data;

comparing [a current state of the] video information corresponding to data for the accepted video frame with gathered video information regarding [the] previous video frame data;

determining differential information based on the comparing; and

storing the differential information as annotations to the accepted video frame data.

30. (Currently Amended) An annotated video bitstream comprising:  
video image data, representing successive video image frames; and  
video processing data regarding the video image data, annotating the video image data, for subsequent video processing, the video processing data indicating differences between the successive video image frames.

31. (Previously Presented) The bitstream of Claim 30, wherein the video processing data comprises camera pose information, camera geometry information and source identification information.

32. (Previously Presented) The bitstream of Claim 31, wherein the camera geometry information is defined by a camera projection matrix.

33. (Previously Presented) The bitstream of Claim 30, wherein the video processing data comprises information for constructing three-dimensional models of objects in a scene of the video image data.

34. (Previously Presented) The bitstream of Claim 30, wherein the video processing data comprises a three-dimensional scene model of objects in a scene of the video image data.

35. (Canceled) .

36. (Currently Amended) The bitstream of Claim 30, wherein the video processing data is associated with a video image frame [present] only for video image frames which differ from the previous video image frame in the succession [for which differential information exists].